

Rubric for 2D Summative

Criteria	R Insufficient	Level 1	Level 2	Level 3	Level 4
Representing (breadth)					
Creates models to represent the problem (e.g. appropriate algebraic, graphical, physical, or scale models)		with limited effectiveness (e.g. 1 strand or limited models)	with some effectiveness (e.g. Two strands or One strand with some models)	with considerable effectiveness (e.g. Two strands with some models)	with a high degree of effectiveness (e.g. Two or more strands with effective models)
Reasoning and Connecting (depth)					
Uses logic and precision in mathematical reasoning		Uses minimal logic and/or precision in mathematical reasoning to solve the task	Uses logic to solve the task but lacks precision OR uses limited logic with precision in mathematical reasoning	Solves the task logically and with precision in mathematical reasoning	Demonstrates a sophisticated level of mathematical reasoning and precision in solving the task
Makes connections between numeric, graphical and algebraic representations		Makes limited connections between numeric, graphical and algebraic representations	Makes some connections between numeric, graphical and algebraic representations	Makes appropriate connections between numeric, graphical and algebraic representations	Makes strong and insightful connections between numeric, graphical and algebraic representations
Communicating					
Expresses and organizes ideas and mathematical thinking using visual and written forms (e.g. pictures, graphs, words, algebraic forms)		Expresses and organizes mathematical thinking with limited effectiveness	Expresses and organizes mathematical thinking with some effectiveness	Expresses and organizes mathematical thinking with considerable effectiveness	Expresses and organizes mathematical thinking with a high degree of effectiveness
Uses mathematical vocabulary appropriately		Uses common language in place of mathematical vocabulary or uses key mathematical terms with major errors	Uses mathematical vocabulary with minimal errors or uses some common language in place of vocabulary	Uses mathematical vocabulary appropriately	Consistently uses mathematical vocabulary appropriately, presenting novel or insightful opportunities for its use

MPM2D - Overall Expectations

By the end of this course, students will:

ANALYTIC GEOMETRY

- model and solve problems involving the intersection of two straight lines;
- solve problems using analytic geometry involving properties of lines and line segments;
- verify geometric properties of triangles and quadrilaterals, using analytic geometry.

QUADRATICS

- determine the basic properties of quadratic relations;
- relate transformations of the graph of $y = x^2$ to the algebraic representation $y = a(x - h)^2 + k$;
- solve quadratic equations and interpret the solutions with respect to the corresponding relations;
- solve problems involving quadratic relations.

TRIGONOMETRY

- use their knowledge of ratio and proportion to investigate similar triangles and solve problems related to similarity;
- solve problems involving right triangles, using the primary trigonometric ratios and the Pythagorean theorem;
- solve problems involving acute triangles, using the sine law and the cosine law.